

## CLAIMS

1. A wound dressing comprising a support sheet and a layer of a synthetic hydrogel material coated onto the support sheet, wherein an active enzyme is dispersed in the synthetic hydrogel material.
2. A wound dressing according to claim 1, wherein the support sheet comprises a polymer film or a woven, nonwoven or knitted fabric sheet.
- 10 3. A wound dressing according to any preceding claim, wherein the support sheet is adapted to block or restrict passage of liquid from a back surface of the sheet to a wound facing surface of the sheet.
- 15 4. A wound dressing according to any preceding claim, wherein the hydrogel layer has a dry basis weight of from 10 to 200g/m<sup>2</sup>.
- 20 5. A wound dressing according to claim 1 or 2, wherein the synthetic hydrogel material is cross-linked hydrophilic polymer of a hydrophilic monomer and optionally one or more comonomers, together with water and/or one or more organic plasticisers, and optionally together with less than about 10% of one or more additives selected from surfactants, polymers, pH regulators, bioactive compounds and mixtures thereof.
- 25 6. A wound dressing according to any preceding claim, wherein the hydrogel layer comprises a hydrogel material selected from gels formed from vinyl alcohols, vinyl esters, vinyl ethers and carboxy vinyl monomers, meth(acrylic) acid, acrylamide, N-vinyl pyrrolidone, acylamidopropane sulphonic acid, pluronic (block polyethylene glycol, block polypropylene glycol)polystyrene maleic acid, NN-dimethylacrylamide, diacetone acrylamide or acryloyl morpholine.
- 30 7. A wound dressing according to any preceding claim, wherein the hydrogel layer comprises a plasticiser.

8. A wound dressing according to any preceding claim, wherein the hydrogel layer is apertured in register with apertures in the support layer.
9. A wound dressing according to any preceding claim, wherein the enzyme is chemically bonded with the synthetic hydrogel material.  
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10. A wound dressing according to any preceding claim, wherein the enzyme is selected from the group consisting of:
  - (a) antimicrobial enzymes such as lysozyme;
  - 10 (b) oxidase enzymes such as lactate oxidase, glucose oxidase, hexose oxidase, cholesterol oxidase, galactose oxidase, pyranose oxidase, choline oxidase, pyruvate oxidase, oxalate oxidase, glycollate oxidase and D-aminoacid oxidases;
  - (c) catalase;
  - (d) peroxidase enzymes such as lactoperoxidase, horseradish peroxidase, iodide
  - 15 peroxidase, chloride peroxidase and myeloperoxidase;
  - (e) Matrix forming and degrading enzymes, including proteinases and proteases, for example Streptokinase, collagenase and streptodornase , bromelain, plasmin and trypsin, Urokinase, plasmin, brinolase, tissue plasminogen activator, Factor XIIIa, thrombin, Von Willibrand factor,
  - 20 (f) Metabolic enzymes: for example Hexokinase, Phosphoglucose isomerase, phosphofructokinase, Aldose, Triose, phosphate isomerase, glyceraldehydes 3-phosphate dehydrogenase, phosphoglycerate kinase, phosphoglycerol mutase, enolase, pyruvate kinase, Citrate synthase, Aconitase, Isocitrate lyase, malate synthase, malate dehydrogenase;
  - 25 (g) Lysyl oxidases; and mixtures thereof.
11. A wound dressing according to any preceding claim, further comprising an layer of wound-fluid absorbent material.
- 30 12. A wound dressing according to any preceding claim, wherein the dressing further comprises a substantially liquid-impermeable backing layer covering the hydrogel layer and the support sheet and the optional absorbent layer.

13. A wound dressing according to claim 8, wherein the backing layer extends beyond at least one edge of the hydrogel layer and support sheet to provide an adhesive-coated margin adjacent to said edge for adhering the dressing to a surface.

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14. A wound dressing according to any preceding claim, further comprising one or more protective cover sheets over the wound facing surface of the hydrogel layer and support sheet.

10 15. A wound dressing according to any preceding claim, wherein the dressing is sterile and packaged in a microorganism-impermeable container.

16. A method of making a wound dressing comprising the steps of:  
preparing a hydrogel premix comprising a synthetic hydrogel polymer  
15 precursor and an enzyme;  
applying a layer of the premix to a solid support; followed by  
polymerising the premix on the support to produce a layer of synthetic hydrogel material on the support, wherein an active enzyme is dispersed in the synthetic hydrogel material.

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17. A method according to claim 16, wherein the hydrogel premix is UV-curable and the step of polymerizing comprises curing the hydrogel with ultraviolet light.

18. A method according to claim 16, wherein the hydrogel premix comprises an  
25 isocyanate-capped prepolymer, and said step of polymerising comprises allowing said prepolymer to react with a chain extending compound.

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